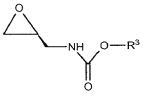
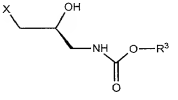
29. A method of preparing a (S)-epoxide having a general structural formula:



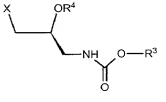
wherein R^3 is C_1-C_{10} alkyl, or a salt or hydrate thereof, comprising contacting

a) an (S)-secondary alcohol having a general structural formula:



wherein X is a halogen, alkylsulfonyl, or arylsulfonyl; or

b) an (S)-ester having a general structural formula:

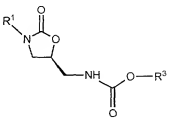


wherein R^4 is C_1-C_5 alkylcarbonyl, with a lithium cation and a base whose conjugate acid has a pKa of greater than about 8.

30. The method of claim 29 further comprising isolating the secondary alcohol in a crystalline form.

31. The method of claim 29 wherein the base is a tertiary-butoxide

32. A method of preparing an (S)-oxazolidinone having a general structural formula:

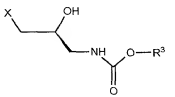


wherein R^3 is C_1-C_{10} alkyl, and R^1 is optionally substituted aryl, or a salt or hydrate thereof, comprising contacting a carbamate having a general structural formula:

$$R^1\text{-NH-CO-O-CH}_2\text{-}R^2$$

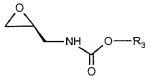
wherein R^2 is selected from the group consisting of C_1-C_{20} alkyl, C_3-C_7 cycloalkyl, aryl optionally substituted with one or two C_1-C_3 alkyl or halogen groups, allyl, 3-methylallyl, 3,3-dimethylallyl, vinyl, styrylmethyl, benzyl optionally substituted on the phenyl with one or two Cl, C_1-C_4 alkyl, nitro, cyano, or trifluoromethyl groups, 9-fluorenylmethyl, trichloromethylmethyl, 2-trimethylsilylethyl, phenylethyl, 1-adamantyl, diphenylmethyl, 1,1-dimethylpropargyl, 2-furanylmethyl, isobornyl, and hydrogen, or a salt or hydrate thereof, with

i) a secondary alcohol having a general structural formula:

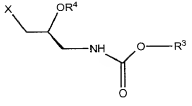


wherein X is halogen, alkylsulfonyl, or arylsulfonyl, or a salt or hydrate thereof;

ii) an (S)-epoxide having a general structural formula:



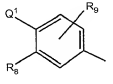
or iii) an (S)-ester having a general structural formula:



wherein R^4 is C_1-C_5 alkylcarbonyl; in the presence of a lithium cation and a base whose conjugate acid has a pKa of greater than about 8.

33. The method of claim 32 further comprising isolating the (S)-oxazolidonone in a crystalline form.

34. The method of claim 32 wherein R^1 is:



wherein Q^1 is: $R^{10}R^{11}N$,